

## REMARKS/ARGUMENTS

### **General Remarks**

Applicants thank Examiner Welter for the courtesy of an interview extended to Applicants' representative on August 10, 2010. Arguments similar to those presented during the interview are reiterated below.

### **Claims Status / Support for Amendments**

Claims 1-13 are pending. Claims 1-6 are currently amended. Claims 7-13 are added. Amended claim 1 finds support in paragraph [0016] of the specification (as originally filed). Amended claim 2 finds support in paragraphs [0005] and [0014] for correction of a typographical error in component (C1). Claim 3 has been amended to correct antecedent basis for component (C2) pursuant to claims 4 and 5 that depend from claim 3. Claim 3 is also amended to include equation (1) which finds support in paragraph [0016] of the specification. Claims 4 and 5 are amended for grammatical purposes. Claim 6 is amended to remove multiple dependency. New claims 7 and 8 find support in originally multiply dependent claim 6. New claim 9 finds support in original claim 3. New claims 10 and 11 find support in paragraphs [0009] and [0014] of the specification. New claims 12 and 13 find support in paragraph [0008] of the specification. No new matter has been entered.

### **§103(a) Rejection**

Claims 1-6 are rejected under 35 U.S.C. §103(a) as obvious in view of the combination of Leusch (WO 00/56276) and DeSadeleer (US 5,973,212). Applicants respectfully traverse this rejection.

The claimed invention relates to a toothpaste composition obtained by mixing (A) 30-60 wt% of erythritol having an average particle size of 200  $\mu\text{m}$  or less, (B) 15-30 wt% of

water, and (C) 0.6-3 wt% of binder, wherein equation (1) (i.e.,  $(\text{wt\% of B}) \times 0.3 + 25 \leq (\text{wt\% of A})$ ) is satisfied (see independent claim 1). The claimed invention also relates to a toothpaste composition comprising (A) 25-60 wt% of erythritol having an average particle size of 200  $\mu\text{m}$  or less, (B) 15-30 wt% of water, and (C) 0.6-3 wt% of a binder (see independent claim 2). At the outset, it should be noted that independent claim 1 refers to a toothpaste composition *obtained by adding, combining or mixing* ingredients (A), (B) and (C1), thus the recited erythritol component (A) refers to the total amount of erythritol added/mixed into the composition. In contrast, independent claim 2 refers to a toothpaste composition *comprising* ingredients (A), (B) and (C1), thus the recited erythritol component (A) refers to the total particulate erythritol present in the composition.

In addition, it is noted that equation (1) of the claimed invention relates to the erythritol component (A) and the water component (B). More specifically, this equation represents how much of the erythritol component (A) is dissolved/undissolved in the water component (B). Accounting for both the solubility of erythritol in water at room temperature (i.e., 33 g erythritol / 100 g solution - see evidentiary document submitted herewith) and the density of erythritol (i.e., 1.45 g/ml), one can see that given the wt% relationships between the erythritol component (A) and the water component (B) as described by the respective wt% ranges and in equation (1), the erythritol component (A) of claim 1 is *not* entirely dissolved in the water component (B). For example, even the smallest claimed wt% of the erythritol component (A) (i.e., 30 wt%) as compared to the largest claimed wt% of the water component (B) (i.e., 30 wt%) results in a 1:1 ratio which clearly does not fall within the solubility parameters of erythritol (i.e., 33 g erythritol / 100 g solution).

Such a lack of complete dissolution of the erythritol component (A) of the present invention (i.e., per the equation (1) of claim 1, or the amount of particulate undissolved erythritol of claim 2) allows for the undissolved/particulate erythritol present in the toothpaste

to be dissolved by the saliva in the mouth of the person using the toothpaste. Thus, since the *in vivo* dissolution of erythritol causes an endothermic reaction, an improved cooling sensation can be experienced by a person during use.

In contrast, Leusch is silent with respect to the dissolution of erythritol. Nonetheless, one can look to the examples of Leusch in order to determine if Leusch discloses toothpastes/dentifrice compositions that contain undissolved/particulate erythritol. In this regard, Example VI (pg. 19) of Leusch is the only disclosed dentifrice composition containing erythritol. Applicants point out that Example VI of Leusch contains 10.00 wt% of erythritol and 23.54 wt% of water. Given the above-noted solubility and density parameters of erythritol, one skilled in the art would understand that the dentifrice composition of Example VI of Leusch contains completely dissolved erythritol (i.e., no particulate erythritol).

Accordingly, not only does Leusch fail to disclose the claimed toothpastes containing particulate erythritol, but Leusch also necessarily fails to disclose or suggest the enhanced cooling sensation within the mouth obtained by the claimed toothpastes due to said toothpastes containing particulate erythritol.

Lastly, DeSadeleer is relied upon by the Office merely for its disclosure of a particle size range for erythritol-containing compositions. Applicants first note that DeSadeleer fails to disclose or suggest a toothpaste containing particulate erythritol. Applicants additionally note that DeSadeleer discloses erythritol prepared by agglomeration with a binder (see col. 2, lines 37-49), whereas the claimed erythritol is prepared by grinding crystalline erythritol (see claim 12). Accordingly, Applicants submit that DeSadeleer fails to fulfill the above-noted deficiencies of Leusch (i.e., a dentifrice containing completely dissolved erythritol versus a toothpaste containing particulate erythritol) and fails to disclose or suggest the type of erythritol used in the claimed invention. As such, Applicants submit that the combination of

Leusch and DeSadeleer fails to render obvious the claimed toothpastes which contain particulate erythritol (obtained by grinding crystalline erythritol) and that result in an enhanced cooling sensation within the mouth upon use. Thus, Applicants respectfully request withdrawal of the obviousness rejection over the combination of Leusch and DeSadeleer.

### **Non-Statutory Obviousness-Type Double Patenting Rejection**

Claims 1-6 have been *provisionally* rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over the claims of U.S. 11/512,326.

Regarding this *provisional* double patenting rejection, Applicants request this rejection be held in abeyance. Terminal disclaimer(s) can be filed, if the claims in the present application remain obvious in view of the claims of U.S. 11/512,326, at the time of allowance of the present application. Furthermore, additional amendments (if needed for allowance of these claims) may eliminate the double-patenting rejections, making the filing of Terminal Disclaimer(s) at this time premature. Indeed, M.P.E.P. § 804.02 IV states that, prior to issuance, it is necessary to disclaim each one of the double patenting references applied. Hence, Applicants respectfully request that the examiner contact the undersigned should the present amendments and arguments be accepted and should the present application be otherwise in a condition for allowance. At that time, terminal disclaimer(s), if warranted, can be supplied to expedite issuance of this case.

Additionally, please note that the present application has a U.S. filing date of August 16, 2006 and an effective U.S. filing date of March 4, 2005 (due to the application being a 371 application), both of which are earlier than the U.S. filing date of August 30, 2006 of U.S. patent application 11/512,326. Therefore the present application is clearly the earlier filed application when compared to U.S. 11/512,326. Thus, pursuant to M.P.E.P. §804 (Part I.B.1) which states:

“If a ‘provisional’ nonstatutory obviousness-type double patenting (ODP) rejection is the only rejection remaining in the earlier filed of the two pending applications, while the later-filed application is rejectable on other grounds, the examiner should withdraw that rejection and permit the earlier-filed application to issue as a patent without a terminal disclaimer. Or, “If ‘provisional’ ODP rejections in two applications are the only rejections remaining in those applications, the examiner should withdraw the ODP rejection in the earlier filed application thereby permitting that application to issue without need of a terminal disclaimer.”

As such, Applicants request that the rejection over U.S. 11/512,326 be withdrawn if it remains the only rejection of record.

### Conclusion

For the reasons discussed above, Applicants submit that all now-pending claims are in condition for allowance. Applicants respectfully request the withdrawal of the rejections and passage of this case to issue.

Respectfully submitted,

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